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UNITED STATES DEPARTMENT OF AGRICULTURE

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A. C. TRUE, Director

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LESSONS ON COTTON FOR THE RURAL COMMON SCHOOLS.

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INTRODUCTION.

In the cotton States the importance of elementary agriculture as a school subject is very generally recognized, and it is now being taught to a greater or less extent in a large proportion of the rural schools. More and more it is becoming a part of the daily program of the schools.

It is hoped that these lessons, exercises, and references on the growing of cotton, based on economic production and properly supervised, may serve as a supplement to the organized school work in elementary agriculture, contributing in a very definite way elements that can be obtained by no other means.

The application of the lessons as outlined here will put the boy at actual farm problems where the expenditure of more or less money is necessary and where profitable incomes may be expected. Thus, through textbook instruction, laboratory exercises, correlations, and practical work in the growing of cotton on the home farm, this bulletin will aid in developing the real educational value of this study.

LESSON I.

Subject.—Varieties of cotton.

Topics for study.—Points of difference between the following prominent and typical varieties of cotton: Cook Improved, Cleveland Big Boll, Triumph, Truitt, Lone Star, Rowden, Foster, Snowflake, Jackson, Trice, Griffin, Express, Russell, Columbia, Durango, and Georgia Big Boll. How many of these varieties are grown in your school district? Which has proved most profitable? Compare one of these varieties with some local variety not found in the list.

Note.—This bulletin furnishes elementary lessons on cotton and is of interest to rural school teachers in the Southern States.

Emphasize the desirability of communities restricting themselves to one kind of cotton. Place the above varieties under the following groups: (1) Big-boll group (see fig. 1); (2) long-staple group (see fig. 2); and (3) small-bolled early group (see fig. 3).

Exercises.—Have six or more pupils bring all the varieties of cotton mentioned in this lesson they can find at home or in the neighbor-

FIG. 1.—Triumph.

hood. These samples should be used in studying the shape of plant, size and shape of bolls, and relative earliness and colors of seed. Have the pupils report in writing the opinions of several farmers as to which varieties are thought to make the largest yields of lint. Before the pupils attempt to select the most desirable plants from which to select seed for the next year's crop, have them read the

references. Then have the pupil bring from the home farm that plant which he thinks approaches nearest to his ideal cotton plant for use in the lesson on judging cotton.

References.[1]—Bureau of Plant Industry Bul. 163; Office of Experiment Stations Bul. 33, pp. 197–224 (these two bulletins are procurable

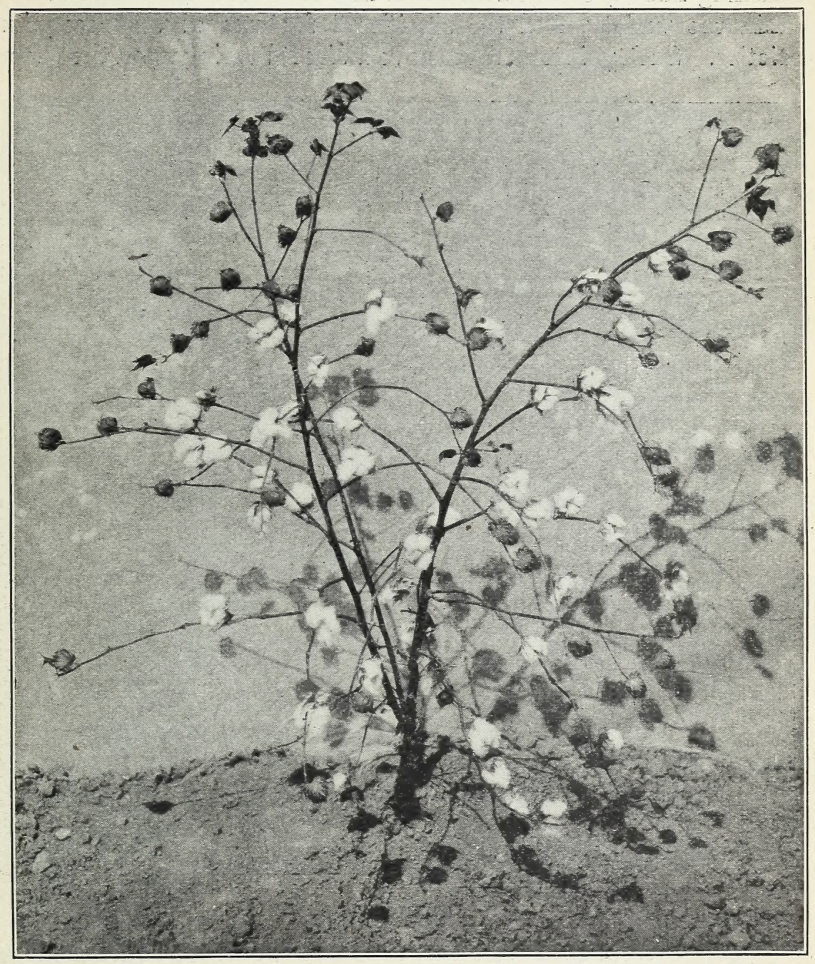

FIG. 2.—Durango.

only from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 25 cents and 60 cents, respectively); Farmers' Bul. 601, pp. 3–5; U. S. Dept. Agr. Yearbook 1902, pp. 365–389.

[1] The references in this bulletin are to publications of the U. S. Department of Agriculture unless otherwise specified.

LESSON II.

Subject.—The botany of cotton.

Topics for study.—This lesson should deal with significant points, such as the morphology and physiology of the plant, including the effect of temperature and moisture on germination and rate of growth, branching habits, cross-fertilization and its effect, the range of type within the variety, and the significant features of well-recognized varieties. Such points as these have a direct bearing upon the lessons

FIG. 3.—King.

of judging cotton, seed selection, time and methods of planting, and time and manner of thinning.

Cotton roots: Dig down around a cotton plant and see how near the surface the roots grow. Compare the root system of cotton with corn, and determine the effect of deep cultivation after the plant is several inches high.

Stems and branches: Study carefully the different types of branches, their function, and arrangement on the plant, as these are important means of distinguishing varieties and determining productiveness and earliness.

A blooming cotton plant:

Root: Fibrous or taprooted?

Stem: Shape of stem, color of bark, color of wood.

Leaves: Alternate or opposite? Shape. Number of lobes. Make drawing showing veins.

Calyx: Size, shape.

Corolla: Color, shape, size.

Petals: Number separate or coalescent.

Stamens and pistils: Number of each. Make drawings of stamens and pistils.

Exercises.—Bring a sufficient number of cotton stalks into the schoolroom, or better still, go with the class to a field of standing cotton. Make notes of your observations in answer to questions on Topics for Study.

References.—Bureau of Plant Industry Circ. 109, pp. 11–16; Bureau of Plant Industry Buls. 221, 222, 249; Textbooks on elementary agriculture; Office of Experiment Stations Bul. 33, pp. 67–80.

LESSON III.

Subject.—Judging cotton.

Topics for study.—Object of cotton judging. Meaning of expression cotton "runs out." Four reasons for depreciation in productiveness and quality. Crossing versus selection as a means of improving cotton. Simplest method of selection. Principal qualities desired in the plant.

Exercises.—With the use of the score card and directions for judging cotton given below, determine the best plant selected by the pupils.

DIRECTIONS FOR JUDGING COTTON.[1]

1. The Plant.

On the score card as suggested the ideal plant is given a rating of 25 points. In judging the exhibits in contests, cuts should be made more severe as the plant departs farther from the standard.

For plants departing only slightly from the variety standard as to size, a cut of 1 to 1½ points should be made. If this departure is very marked a cut of 3 points may be made.

For excessively long joints and poorly placed and developed branches cut a maximum of 2 to 5. For slight defects in these respects cut from 2½ to 3 points.

For a plant which develops a single central stem bearing numerous horizontal fruiting branches allow five points as the perfect score.

[1] Adapted from directions published by the Georgia State College of Agriculture.

Score card for the cotton plant.

The cotton plant.	Score. Perfect.	Student's.	Corrected.
Plant, vigorous, stocky, 25 points:			
Size, medium to large as influenced by soil, location, season, and variety	5		
Form, symmetrical, spreading, conical, height, and spread according to soil, etc	5		
Stalk, minimum amount of wood in proportion to fruit	5		
Branches, springing from base, strong, vigorous, in pairs short-jointed, inclined upward	5		
Head, well branched and filled, fruited uniformly	5		
Fruiting, 24 points:			
Bolls, large, abundant, uniformly developed, plump, sound, firm, well-rounded, apex obtuse, singly or in clusters	4		
Number of bolls, according to variety, soil, and season	4		
Bolls per plant, thin uplands, 10–20; fertile uplands, 20–25; "bottoms," 50–100; special selection, 100–500	4		
Bolls per pound of seed cotton, large, 40–60; medium, 60–75; small, 80–110	4		
Character of bolls, number of locks 3 to 5; kind of sepals; retention of cotton	4		
Opening of bolls, uniform including top crop, classify as good, medium, poor	4		
Yield—standard 1 bale per acre, 30 points:			
Seed cotton, estimated by average plant, distance of planting, per cent of stand, plants per acre; thin uplands, 10,000; fertile uplands, 6,500; "bottoms," 4,500; distance of plants $3\frac{1}{2}$ by $1\frac{1}{4}$ feet, $4\frac{1}{2}$ by $1\frac{1}{2}$ feet, $4\frac{1}{2}$ by 2 feet, respectively	12		
Per cent lint, not less than 30, standard 33 to 35	12		
Seeds, 30–50 per boll, large, plump, easily delinted, color, according to variety; germination not less than 95 per cent	6		
Quality and character of lint, 21 points:			
Strength, tensile strain good, even throughout length	5		
Length, common standards for upland, short $\frac{7}{8}$ to 1 inch, premium $1\frac{1}{16}$ to $1\frac{3}{8}$ inches; long staple, $1\frac{3}{16}$ inches and better	5		
Fineness, fibers soft, silky, and pliable, responsive to touch	5		
Uniformity, all fibers of equal length, strength, fineness	5		
Purity, color dead white; fiber free from stain, dirt, and trash	1		

No. of plant..... Source.....
Type.....
Remarks on plant.....
Date....., 19..... Name of student.....

When the head is full, on account of superabundance of long upright branches, cut a maximum of three points. As these faults are less pronounced, reduce the cuts until for slight defects on these accounts a minimum cut of one-half point should be given.

2. Prolificacy.

In considering the fruitfulness of a plant or set of plants the term prolificacy can be used only in a relative sense. The plant possessing the greatest number and best-formed bolls should be given a rating of 24, or perfect in this respect, while others should be cut more or less severely as the number of bolls they bear falls below that of the standard. The single or cluster arrangement of bolls should vary with the typical habit of the variety; some varieties are cluster bearers while others are noted for bearing bolls singly. Uniformity in which the bolls are arranged on any exhibit should be made the standard. Give an exhibit absolutely uniform in this respect 4 points. As others are more or less irregular in this respect cut from 1 to $1\frac{1}{2}$ points on the score card.

Next in importance to prolificacy or number of bolls is their size, shape, and manner of opening. Large bolls yield more cotton per boll than do small ones. There is also a difference in the average size of the bolls on different plants of any single variety. The preference should be given to the plants bearing the larger bolls, provided, of course, that the quality of lint is maintained and the increase in size fully compensates for the decrease in number.

The shape or form should be true to that peculiar to the particular variety shown. Uniformity in shape or form in plants and fruit shows good breeding and also suggests ability to transmit desirable qualities to the progeny. Consequently it is of value to the plant breeder. As the bolls are of different shapes cut from one-half to one point as the number departing greatly from the variety shape increases. Special attention should be given to malformed bolls.

The way in which the mature bolls open is of importance. The opening should be such as to make the cotton easy to pick, but at the same time it should not be such as to cause easy shedding of lint. For the best opening bolls give the plant a rating of 5 points. If the opening is only fair make a cut of from 1 to 1½.

3. Yield of Seed Cotton.

Yield of seed cotton, while depending on the qualities already discussed, that is, the right kind of a plant and a sufficiently large number of bolls of good size and shape, should have considerable weight in fixing the value of superior rating of any cotton exhibit.

After the exhibit has been rated as to prolificacy and size of bolls, select a fixed number, say 10 four-locked or five-locked bolls already opened, pick the seed cotton from these bolls, determine the yield from these bolls, and then from this average calculate the yield from the entire 10 plants constituting the exhibit. Give the best yielding lot a rating of 30 points. Then as others yield less and less give them a maximum accordingly.

After total yield has been rated attention must be given to the percentage of lint produced by the different lots of cotton to be judged. This is given a possible rating of 12 points, which should be assigned only to samples showing not less than 35 per cent of the lint to the cotton seed. For each and every 1 per cent below 33 the sample should be given a cut of 1 point. Thus if a sample should only show 25 per cent lint it should receive a cut of 10 points, which, deducted from the possible score of 12 points, indicating perfection, leaves only 2 points to the credit of the sample.

The percentage of lint should be determined by taking the contents of a few bolls from each sample, placing them in the sun, or, better, in a dry room, for a period sufficiently long to bring the samples to a

uniform point of dryness; after which the lint should be removed from the seed by hand, then each carefully weighed and the percentages calculated.

4. Quality of Lint.

Quality of lint is assigned a possible rating of 21 points on the score card. These are divided as follows: Strength, 5 points; length, 5 points; fineness, 5 points; purity, 1 point; uniformity as to length, fineness, purity, and freedom from faulty fibers, 5 points. Of course, these scores are only intended to offer means or standards by which the different exhibits may be compared. Therefore, when there are points about which there seems to be uncertainty the most perfect sample can well be given the highest score obtainable for that point. Then the others should be rated as they approach the standard fixed by this better sample. Thus, for the longest lint give five points and the same for the finest; also, that showing the greatest degree of purity and also for the greater uniformity. Then, as other samples fall short in any one of all these respects cut accordingly.

Exercises.—Combing and mounting (fig. 4) samples of seeds from bolls of different varieties will be instructive to pupils.

References.—Bureau of Plant Industry Bul. 222; Farmers' Bul. 591; cotton score card published by the State agricultural college; State cotton growers' association, if there is one.

LESSON IV.

Subject.—Selecting seed.

Topics for study.—Qualities desired in the plant. Four defects of boll to be looked for in selecting seed for planting. In how many directions does the cotton selected for judging purposes need improvement? Discuss how these improvements may be brought about. What constitutes good seed for planting? Where to obtain the best possible seed. How to gather seed for planting. Methods of separating large and small or heavy and light seed. Growing improved varieties, advantages, money value.

Exercises.—Let the pupils pick the cotton from 100 plants of poorest or least productive ones and weigh. From this weight determine how many plants of this type would be required to give a yield of 1,500 pounds of seed cotton or one bale of 500 pounds of lint. Then have the pupils pick the cotton from 100 of the best plants found in some cotton patch. Determine the number of bolls they contain, the average number per plant, the number required to give 500 pounds of lint, the number of plants required to produce this yield.

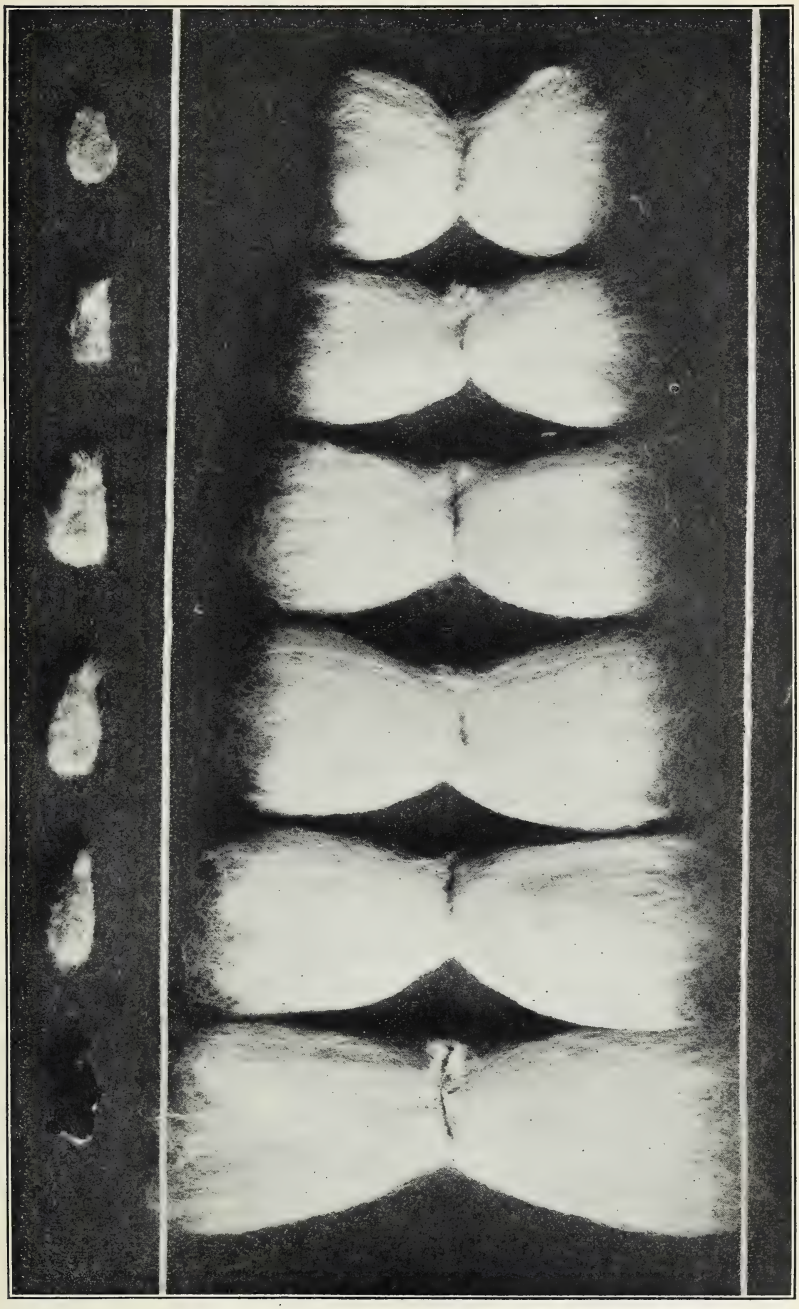

FIG. 4.—Varieties in order from top: Blackseed, Durango, Lone Star, Trice, King, and Half-and-half.

References.—Bureau of Plant Industry Cir. 66; Farmers' Bul. 501; Office of Experiment Stations Bul. 33, pp. 211, 212. Write to your State college of agriculture for literature on selecting seed for planting.

LESSON V.

Subject.—Place of cotton in crop rotation.

Topics for study.—(1) Reasons for rotation: (*a*) Different crops make different requirements of the soil; (*b*) root systems differ; (*c*) crops should be selected to suit varying seasonal conditions; (*d*) the culture of one crop prepares for a succeeding crop of a particular kind; (*e*) distribution of labor. (2) Cotton in systems of rotation. How would you make a crop of cotton regardless of the boll weevil?

Exercises.—Draw plans of the home farm, showing fields, and write in each field the crops in the order in which they were grown during the last five years. Write to the State agricultural college for (*a*) a system of crop rotation in cotton farming and for (*b*) a system of rotation in live-stock farming, which will help to create extensive home markets for roughage and leguminous crops and at the same time add to the fertility of the soil.

References.—Farmers' Buls. 326, p. 21; 364, pp. 8, 9; Office of Experiment Stations Bul. 33, p. 260.

LESSON VI.

Subject.—Preparation of the seed bed.

Topics for study.—It is good practice to plow any soils except the sandiest in the fall, provided some winter-growing crop, such as the small grains, or clovers, or vetches, are sown.

Kinds and conditions of soil necessary. Time of plowing. Methods of plowing or breaking. Depth of plowing. When should cover crops be turned under for cotton? Characteristics of a good seed bed.

Exercises.—Show the effect of plowing under cloddy soil, or a large cover crop, on the rise of capillary water; also the effect of disking a cover crop, or heavy coating of manure into the surface soil before turning under. Use four lamp chimneys, numbered 1, 2, 3, and 4. Fill all to a depth of 5 inches with a sandy soil. Finish filling No 1, using good loam soil. On top of the sand in No. 2 put 1 inch of wheat or oat chaff well packed down. In No. 3 put 2 inches of fine clods. Finish filling Nos. 2 and 3 with loam soil. Complete the filling of No. 4 by using a mixture of loam and the same amount of chaff used in No. 2. Set all chimneys in about 1 inch of water. Observe and explain results.

References.—Textbooks on elementary agriculture; bulletins published by the State agricultural college; Office of Experiment Stations Bul. 33, pp. 258–260.

LESSON VII.

Subject.—Fertilizers and how to apply them.

Topics for study.—What are the indispensable requirements for a good cotton yield? What is one of the surest fertilizers for producing a large cotton crop? Why? What element of plant food is needed most by the soils for profitable cotton production in your district? What necessary elements of plant food do commercial fertilizers supply? When are such fertilizers likely to be profitable and how should they be applied? Show the relation between profitable cotton production and the use of commercial fertilizers and legumes in different kinds of soils. Name the steps necessary in building up the soil permanently on a run-down cotton farm in your district.

Exercises.—If nitrogen is worth 16 cents per pound, available phosphoric acid 4 cents, and potash 4 cents, figure the value of the plant food in a ton of commercial fertilizer of the following composition: (1) Phosphoric acid 10 per cent, nitrogen 2 per cent, potash 2 per cent (10:2:2); (2) nitrogen 3 per cent, phosphoric acid 10 per cent, potash 3 per cent (3:10:3). What percentages of phosphoric acid, nitrogen, and potash are contained in a ton of fertilizer consisting of 900 pounds of acid phosphate, 800 pounds of cottonseed meal, and 300 pounds of kainit?

References.—Farmers' Buls. 44, 48, 326; Farm Arithmetic; Office of Experiment Stations Bul. 33, pp. 169–196.

LESSON VIII.

Subject.—When and how to plant cotton.

Topics for study.—At what time do the best farmers in your school district plant their cotton? Why should farmers wish to plant cotton as early as it is safe from frost? Is there any advantage in late planting in weevil-infested districts? There is no warrant in fact for the idea that only the earliest and most inferior of cotton can be grown under weevil conditions. See references on the importance of community action as to season of planting. The weevil invasion should lead to a better appreciation of the importance of growing improved varieties. Why? Close spacing, use and value in crop increase. Show reasons for and against flat planting and planting in beds. Which is frequently the practice in semiarid sections? Amount of seed per acre. How far are the rows spaced apart? Time and purpose of "chopping"? Show the relation between time of chopping and the branching habits of the plants and that delayed thinning may result in suppressing the vegetative branches and so increasing yield of cotton. What is the secret of a prize-winning cotton crop?

Exercises.—If each cotton seed planted 4 feet by 12 inches apart developed into a mature plant, how many seed would be needed to

plant an acre of ground? How many pounds would that require for the different varieties? Source of cotton seed? How many pounds of cotton seed do the best farms in your district raise on an acre? How many bales of cotton do the best farms in your district raise on an acre? Show how the production per acre may be increased and the fertility of the soil maintained.

References.—U. S. Dept. Agr. Yearbook Sep. 579; Farmers' Buls. 36; 48; 364; 501, pp. 11–13, 21; 510, pp. 13, 14; 601, pp. 3, 4, 6, 7; Bureau of Plant Industry Circ. 1130; Office of Experiment Stations Bul. 33, p. 261.

LESSON IX.

Subject.—The cultivation of cotton.

Topics for study.—Stages at which a weeder or harrow is needed in the cultivation of cotton. Importance of first tillage. Under what special conditions may the turnplow be used for "barring off" cotton? Shallow cultivation. Proper depth of cultivation. Frequency of renewal. Advantages of closer spacing. What is best to sow in cotton along in August in order to make winter pasturage? What can be sowed at the last "plowing" of cotton that will serve as a winter cover to the land and furnish humus-forming material to be turned under the following spring? Discuss the importance of such a practice.

Exercises.—The effect of frequent shallow cultivation to maintain soil moisture may be shown by filling two cans or flower pots with rich soil and planting cotton. When the plants are 2 inches high cover the soil in one pot with a layer of coarse sand or granular dry soil to a depth of 1 inch. Place in a warm place and observe which plants first show the need of water.

References.—A New System of Cotton Culture and Its Application is the title of Farmers' Bul. 601. Practice of cultivation on a profitable cotton farm may be found in Farmers' Bul. 364, pp. 13, 14. Bureau of Plant Industry Circ. 1130. Office of Experiment Stations Bul. 33, p. 261. Nearly all the cotton States have one or more bulletins on this subject. These should always be procured from the State agricultural college and studied in class.

LESSON X.

Subject.—Insect and other enemies of cotton.

Topics for study.—The bollworm. The Mexican cotton-boll weevil. The cotton caterpillar. The cotton red spider. The nematode worm. The cowpea-pod weevil.

Exercises.—Find out from the farmers in the district the extent to which cotton is injured by the above insects. The teacher and pupils should study the features of the life history and of the seasonal history of the weevil that are of cardinal importance in

control. If possible, have the pupils collect and preserve for the school exhibit local cotton insect pests.

References.—Farmers' Buls. 500, 501, 512, 606; Office of Experiment Stations Bul. 33, pp. 317–342.

LESSON XI.

Subject.—Cotton diseases.

Topics for study.—Cotton wilt. Cotton root rot. The control of root rot by crop rotation. Boll rot or anthracnose. Cotton rust. What should be said in reply to the question, "Do you know of any method of cultivation or any fertilizer that will prevent blight in cotton?"

Exercises.—Have the pupils gather data at home concerning the extent to which cotton is affected by the above diseases. If possible, have the pupils collect and preserve for the school exhibit local cotton diseases.

References.—Farmers' Buls. 555, 586, 625; Bureau of Plant Industry Circ. 92; Office of Experiment Stations Bul. 33, pp. 279–314. Nearly all the State agricultural colleges in the cotton States have one or more bulletins or circulars on this subject. These should always be procured and studied in the class.

LESSON XII.

Subject.—Harvesting and marketing cotton.

Topics for study.—The three chief elements to satisfy market conditions are: (1) A definite and well-established standard, (2) reliable and regular quotations based thereon, and (3) adequate storage facilities to protect cotton against the weather and country damage, and which at the same time places the cotton in position for the issuance of warehouse receipts that may be used for obtaining loans at low rates of interest. Time for harvesting. Gathering of the crop. Separation of fiber and seed. Baling of the cotton. The nine United States official cotton standards for grades in more or less general use. How is the grade of a sample of cotton determined? Reasons for protecting baled cotton from the weather.

Exercises.—Through your pupils and especially those in a cotton contest collect data for record blank shown on pp. 14 and 15.

References.—Department Bul. 62; Farmers' Buls. 302, 364, 591; Office of Experiment Stations Bul. 33, pp. 351–360, 381–384; U. S. Dept. Agr., Office of Markets and Rural Organization, S. R. A. 1.

LESSON XIII.

Subject.—Cotton seed.

Topics for study.—Cottonseed products in the feeding of farm animals; as a human food; as a fertilizer.

Exercises.—With the assistance of reference books such as Henry's Feeds and Feeding work out with the pupils a balanced ration which includes cottonseed meal for a dairy cow, a 1,000-pound steer, and a work-

ing mule. Also prepare fertilizer formulas, which will include cottonseed meal for the common truck crops and cereals as well as for cotton.

References.—Farmers' Buls. 22, 36, 170, 346, 410; Office of Experiment Stations Bul. 33, pp. 385–421.

LESSON XIV.

Subject.—Cotton and its products.

Topics for study.—Agricultural products of cotton. Manufactured products of cotton. By-products of cotton.

Exercises.—Which removes the most plant foods from the soil—cotton that yields 1,000 pounds of seed cotton per acre or corn that yields 25 bushels to the acre, the stalks and leaves left on the land in both cases? In comparative valuations of feeding stuffs to what extent in per cent does cottonseed meal exceed corn meal? In one ton of cotton seed how many pounds are there of hulls, meal, and oil?

References.—Farmers' Buls. 36, 286; Office of Experiment Stations Bul. 33, pp. 365–380.

EXHIBITS, REWARDS, AND ORGANIZATION FOR CLUBS.

Since the rural schools have begun to teach agriculture a wide and useful field for school exhibits has come into existence. Many teachers are using exhibits as the best means of calling the attention of their respective communities to the work that is being done in agriculture. It is well to hold an exhibit in the schoolhouse at the close of the contests and invite parents and others interested in school work to attend. Before an exhibit should be allowed to enter a contest or school credit given for a home project in cotton, a report similar to that given below should be kept and presented in good condition with the exhibit.

For information and suggestions on rewards or prizes as well as organization of clubs write your State agricultural college.

Record blank for club project in cotton.

CROP.

Season..... Class..... Variety..... Plants per acre.....
Character of soil..... Crop for 5 years past.....

SOIL PREPARATION.

Date of plowing..... Dates of cultivation.....
Implement used..... Implements used.....
Depth plowed..... Cost of preparing seed bed.....
Cost of plowing..... Condition of land when seeded.....

CROP SEEDING AND CULTIVATION.

Variety of cotton planted..... Amount of fertilizer per acre.....
Date of planting..... Cost of fertilizer.....
Cost of seed and seeding..... Dates of cultivation.....
Per cent of stand..... Implements used.....
Distance between rows..... Cost of cultivation.....
Distance between hills..... Kind of fertilizer.....
....

HARVEST AND YIELD.

Date of harvest..... Yield in seed cotton.....
Days from seeding to harvest..... Cost of harvest.....
Remarks: .....
.....
.....
Approved: .....Teacher.
.....Student. Age.....
Post office..... .....School.
County.....

Estimate the rental of your land at $5 per acre and your time at 10 cents per hour. Count all commercial fertilizers at actual cost, and homemade manures at $2 for a 2-horse load of about 50 bushels, and $1 for a 1-horse load of 25 or 30 bushels.

EXPENSES.

Rent of land.....$.....
Preparation of seed bed:
—— hours of horse labor, at 5 cents an hour for each horse..... .....
—— boys' labor, at 10 cents an hour for each ....
Cost of seed..... .....
Cost of planting, boy's own labor —— hours, at 10 cents per hour..... .....
Cost of manure..... .....
Cost of fertilizer, —— pounds, at $—— per ton..... .....
Cost of cultivation:
—— hours of horse labor, at 5 cents an hour, each horse..... .....
—— hours of boys' labor, at 10 cents an hour..... .....
Cost of gathering:
—— hours of boys' labor, at 10 cents an hour for each..... .....
Cost of ginning, baling, and marketing..... .....
Total cost.....$.....

RECEIPTS.

Total value of lint, —— pounds, at ——.....$.....
Total value of cotton seed, —— pounds, at ....
Total receipts..... .....
Net profit..... .....

We, the committee, hereby certify that we have measured the cotton of ——— of ——— on this ——— day of ——— 19 , and that the following statements are correct: Length of plat, —— yards, —— feet; width of plat, —— yards, —— feet; area of plat, —— acres. The amount of cotton obtained, —— pounds, in the measured plat.

——— ———
——— ———
——— ———

SUGGESTIVE CORRELATIONS.

Reading and spelling.—The Farmers' Bulletins, the bulletins and circulars of the State college of agriculture, and the books that are consulted in connection with the study of the various questions raised while studying the subject of cotton will all give reading material of the best kind. Magazine articles and articles in the farm papers should be used freely for reading and discussion.

List and assign new words related to the cotton industry for spelling exercises.

Language lessons.—Written reports of field observations. Compositions on selection of seed in the field. A careful study of these compositions should be made to the end that the pupils may grow in power to express their ideas truthfully, systematically, adequately, and interestingly. Write letters ordering seed catalogues and asking for the quotation of prices on cotton. In these letters study for correct form, good composition, and for courtesy in expression.

Drawing.—Make drawings of ideal and faulty specimens of common varieties of cotton grown in the district. Collect, name, and make drawings of common weed and insect pests of cotton. Pupils should be encouraged to illustrate their descriptions by offhand sketches on the blackboard. Make drawings of the important parts of machinery used in cotton culture. In this connection emphasize the learning of the names and uses of implements and their parts.

History.—Study the history of the varieties of cotton common to the community as to their origin, time, and circumstances of their introduction and the success with which they have been grown. Special attention should be given to the development of the cotton gin and its relation to the cotton industry. The history of cotton in India, Egypt, Persia, the West Indies, and Brazil should be studied carefully. Study the history of weeds, insects, and fungous diseases of cotton as to origin, introduction, spread, damage done, and methods of combating.

Geography.—Study the commerce of cotton from (1) India to the Mediterranean countries; (2) Mediterranean countries to western Europe; (3) America to western Europe. Prepare maps showing lines of commerce and locate the principal receiving and distributing points for each agricultural product bought and sold. Study the trade that results from the exchange of agricultural products between your State and other States and countries; compare the exports and imports as to quantity, value, and character.

Arithmetic.—The business of the farm offers the best possible material for arithmetic study. Develop exercises on the cost of producing one bale of cotton per acre under different methods of farm practice. Problems involving the annual reports of club members should be developed. All business forms used locally, such as receipts, bills, freight bills for fertilizers, etc., should be studied in school.

"Correlating Agriculture with the Public School Subjects in the Southern States" is the title of Department Bulletin 132, published by the United States Department of Agriculture.

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